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ABSTRACT

Colleges and universities are being challenged to examine their mission, structure, and delivery of services for two reasons with far-reaching implications for cooperative education. The first is the move from an industrial to a postindustrial economy. The second deals with incorrect assumptions about learning based on outmoded information and inattention to research results, such as the following: people predictably transfer learning to new situations; learners are best seen as passive vessels into which knowledge is poured; learning is the strengthening of bonds between stimuli and correct responses; what matters is getting the right answer; and skills and knowledge should be acquired independently of their contexts of use. Growing research in the cognitive sciences and anticipated demands of living and working in the new millennium leave no doubt that learning will become a major enterprise. The growing emphasis on learning has caused many educators to revisit Bloom's cognitive domain, Kratwohl's affective domain, and Dave's psychomotor domain. Each taxonomy is arranged as a hierarchy. The industrial education model makes it clear that the focus has been on the two lowest levels in each domain. Topics for faculty development include the following: helping them understand that application is a higher level of cognition than merely knowing and comprehending and providing examples; prodding them with ideas and activities to help students apply classroom knowledge; showing how co-op and other experiential learning strategies help students value what they are learning and increase retention; emphasizing quality; and teaching performance assessment. (YLB)

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ED 414 433

Cooperative Education in the New Millennium: Implications for Faculty Development

by Cal Crow

Cooperative Education Experience

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COOPERATIVE EDUCATION
EXPERIENCE

Engaging Faculty as Key Stakeholders in Cooperative Education

Between the late '60s and early '90s, millions of federal dollars and enormous effort by practitioners, were expended to begin, expand and institutionalize cooperative education programs at campuses across the U.S. For nearly three decades, practitioners developed and implemented new programs, designed creative strategies for marketing to employers and worked hard to generate faculty support and involvement.

In reviewing the big picture, it is probably fair to say that while marketing to employers has been successful, sustaining program development has been a mixed bag, with many programs drastically shrinking or even folding due to the loss of federal funding. On most campuses, cooperative education is still not institutionalized, but continues to operate "in the margins" where it struggles to justify itself as a credible form of learning.

Why, after thirty years of concentrated effort by the field, is this the case? I believe a key reason is, in spite of our best efforts, faculty remain largely uninvolved. Many continue to have concerns and reservations about cooperative education and other forms of experiential learning. Some are simply unfamiliar with this form of learning, while others are distrustful of its "vocational" connotations. Most are unsure of how to integrate this form of learning into their existing curriculum. Ironically, even those who understand and support cooperative education find themselves having to choose between activities that are affirmed by the rank and tenure system, and those that are not. Unfortunately, experiential learning is rarely viewed as an activity worthy of either tenure or promotion.

In order to engage faculty as active participants in cooperative education and other work-based learning strategies, we must address their concerns and provide information, methodologies, tools and support to help them make experiential learning an integral part of their teaching day. Discussions about how to do this must be part of any attempt to address the problem of marginalization.

This is a challenge that CEA wants to take on. If we can provide research, conduct state-of- the-art training, and develop tools and resources, to involve more faculty in all forms of experiential education, we will have taken a huge step forward towards realizing one of our key mission goals, and will have made a significant difference in how students acquire and apply knowledge in higher education today.

This issue of our newly-formatted magazine, EXPERIENCE, is devoted to setting the stage for an in-depth look at what we know about how people learn, and at integrating learning and application. It is an important first step towards identifying a philosophy and pedagogy for cooperative education in the next century.

In subsequent issues, we will look at strategies for effectively engaging faculty. However, the point we want to make in this first issue is that we as cooperative education practitioners must have a clear vision of how our discipline fits into the larger educational picture, and of what we want for the future, before we ask others to join us. So while this issue is important from a faculty perspective, it is no less important for the concerned practitioner who wonders about the future of cooperative education.

In order to generate discussion among our readers, we are setting up a listserv to allow members to interact with each other, and with Cal Crow, author of "Cooperative Education in the New Millennium: Implications for Faculty Development." To join the list and take part in this important dialogue, simply follow these instructions.

To subscribe, send an email to CEAinfo@list.acadsoft.com Do not type anything in the subject line and do not include an email signature. In the body of the email, type: subscribe cea "Name" <email address>.

Make sure that you use the punctuation as shown. Within 24 hours you will receive a message confirming your registration and giving usage instructions.

We hope you will join us and contribute ideas for engaging faculty as stakeholders in cooperative education.

Dawn E. Pettit, Executive Director

Cooperative Education in the New Millennium: Implications for Faculty Development

by Cal Crow

Nearly every college and university in the country is being challenged to examine its mission, structure and delivery of services. There are at least two distinct reasons for this, both with far-reaching implications for cooperative education.

The first is our move from an industrial to a post-industrial economy. Although the world (and workplace) outside of education are changing tremendously, many postsecondary institutions are having a difficult time responding to these changes. For example, while the global economy calls for customization and diversity, many colleges and universities still offer a standardized,

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Cooperative Education in the New Millennium - Implications for Faculty Development - *Continued from Page 1*

one-size-fits-all curriculum, which all students are expected to complete in the same time frame. Standardized tests are used to admit, place and label students. Students are told what the requirements are, then given directions on how to meet them. They are rarely asked about their career plans or what they want the institution to do for them.

While employers expect workers to bring a variety of knowledge, skills and experience to the workplace (e.g. the SCANS skills), many students leave colleges and universities with narrowly focused majors and little or no experience. The institutions themselves are still organized around separate schools, divisions and departments, a structure that prevents people from working together. Many excellent courses and programs are offered, but neither students nor instructors are expected to make connections among them. This has resulted in questions such as: "What does co-op have to do with teaching philosophy?" "Why would an accounting instructor and an English instructor want to work together?" "Why would a history major need, or even want an experience in the workplace?" "As a humanities instructor, what would I have in common with a vocational educator?"

While terms such as "lifelong learning" and "the learning organization" have become common place in the new economy, learning has not been a watchword in educational institutions. Although there is a national movement in community colleges to shift the focus from teaching to learning, the effect on behavior has been minimal. It is easy to find students who can talk about what they are taking and doing, and faculty to describe what they are teaching. However, it is more difficult to find individuals who are eager to talk about the actual learning taking place. On many campuses, credits, courses, requirements, certificates, and diplomas are considered much more important than learning outcomes. Graduates who went to college to get a good job, often find that they have a difficult time describing what they know and can do during interviews with potential employers.

A second development requiring postsecondary institutions to reexamine their purpose comes from the cognitive sciences. Current information about the brain and research regarding learning and information transfer are challenging many of our previously held beliefs. In 1992, after examining much of the research available at that time, Sue E. Berryman and Thomas R. Bailey concluded, "First, school routinely and profoundly violates what we know about how people learn effectively and the conditions under which they apply their knowledge. Second, these practices seem to permeate all levels and sectors of American education and training, from elementary grades to corporate training." To illustrate this point, Berryman and Bailey described five incorrect assumptions about learning, each based on outmoded information and a lack of attention to research results.

Incorrect Assumption #1: People predictably transfer learning to new situations.

For many years, educators and trainers assumed that taking a class represents the best way to learn, and that people who do well in the classroom will automatically transfer what they know to the world-at-large. Corollary assumptions dictate that people automatically make connections between out-of-school experiences and what is expected of them in the classroom, and that knowledge and skills developed in one classroom will automatically transfer to another. For example, it is commonly assumed that people who read for leisure will read equally well in an educational setting, or in the workplace, and that people who use mathematics in the workplace have little trouble with mathematics in the classroom. The belief that reading is reading and math is math, no matter where they are practiced, emanates from this incorrect assumption. It has also been assumed that a student who studies a concept in history (e.g., conflict) would automatically apply it in another classroom, (e.g., psychology or philosophy). The research clearly indicates that people do not predictably transfer learning experiences from one situation to another, as we had assumed.

Incorrect Assumption #2: Learners are best seen as passive vessels into which knowledge is poured.

From this student-as-empty-vessel perspective, education and training become a process of filling students with a structured body of information that authorities agree is important to know. Teachers control both the content and process of the educational encounter, and students passively receive the word. The lecture hall is a prime example of this. Learning becomes a matter of absorbing what experts have concluded to be true, rather than a process of inquiry and discovery.

This paradigm of teacher as pourer and students as receivers reduces or removes chances for exploration, questioning and intervention. When control over learning rests solely with the instructor or the institution, learners become dependent on experts and authorities for guidance and feedback. They have little confidence in their own abilities to make sense of and use what they are learning. In this system, students have difficulty evaluating their work unless they have a grade from a teacher.

Incorrect Assumption #3: Learning is the strengthening of bonds between stimuli and correct responses.

American education has a strong behavioral flavor. If the instructor manipulates the environment effectively, students will respond appropriately. From this perspective, teaching is viewed as the process of identifying and controlling a wide array of variables. This has led to 1) the breakdown of complex tasks and ideas into components, subtasks and items that would be studied and examined separately, 2) rote and routing learning and repetitive training, and 3) a focus on the right answer and the counting of correct responses. To keep education simple and measurable, students learn disconnected bits of information and processes, without a larger context to give them meaning.

Current research indicates that students learn better in complex, meaningful environments. Piece-by-piece instruction, on the other hand, actually increases a student's chances of forgetting, maximizes inattention and encourages passivity. Research also indicates that many learning difficulties, even in elementary school, are caused by our failure to cultivate higher order thinking processes in students.

Incorrect Assumption #4: What matters is getting the right answer.

In American education, most tests and other academic evaluation techniques focus on getting the right answer. Students who understand this, and know how to provide this kind of answer are considered smart. Students who do not understand this way of thinking (or who do not believe it) are considered less smart.

This expectation that learners produce the right answer discourages instruction in problem solving. Because knowing facts reflects a low level of cognitive functioning it does not develop students' ability to think about a topic in different ways. When the right answer is desired, students focus on what the teacher wants, or what will be on the test, rather than on how they can improve learning. Many students who get the right answer appear to be learning, when in reality they are merely demonstrating veneers of accomplishment -- they know the facts but have little or no grasp of the principles behind them. Furthermore, from this right answer perspective, wrong answers are viewed as failures rather than learning opportunities.

Incorrect Assumption #5: To ensure their transfer to new situations, skills and knowledge should be acquired independently of their contexts of use.

Students spend a great deal of time responding to information and assignments generated by someone else, e.g., textbook authors or instructors. When these activities do not reflect the experience of the learner, little internalization occurs.

Research indicates that context is essential for both understanding and learning. This means the learning must be coherent and interpretable, and must come out of the experiences of the students. Part of good teaching is to present information in a manner that generates meaning for the students. When this occurs, students will know what they are learning, why they are learning it, and how it can be used in the context of their lives.

The growing amount of research in the cognitive sciences, coupled with the anticipated demands of living and working in the new millennium, leaves no doubt that learning will become a major enterprise. There are several reasons for this:

1. As information and relationships become more connected and complex, we will be required to think systematically and to use higher order thinking skills regularly. There will be fewer routine procedures and right courses of action.

2. The age of information and technology means that learning through observation and manipulation will be replaced by learning through symbols. Former Labor Secretary Robert Reich calls this the age of the symbolic analyst.

3. We will be required to deal with new situations, to handle the unfamiliar and unpredictable, and to identify and frame problems that no one has encountered before. We must be able to learn by surprise.

4. We will receive increasing amounts of information about the new sciences and find structure in what appears to be chaos and disorder.

5. As we learn more about the brain and about intellectual functioning, we will be expected to grow intelligence.

6. We will be expected to distinguish between information (which is external and produced by others) and knowledge (which is personal, internal and created by individual minds).

7. To increase the likelihood of everyone's success in the new economy, we will be required to use everything we know about learning styles and modalities, about multiple intelligences, and about the effect of culture on learning. Diversity will apply to learning as well as to demographic variables.

The growing emphasis on learning has caused many educators to revisit educational taxonomies, two of which were presented more than four decades ago. The first, which addresses the Cognitive Domain, was developed in 1956 by Benjamin S. Bloom. The six elements are presented in descending order, from highest to lowest, each with a question typifying that level.

6. Evaluation: Involves using criteria and standards to make judgments about the value of ideas, work solutions, methods and materials. "Is this accurate, useful, effective, economical, satisfying?"

5. Synthesis: Involves putting together elements and parts in a new pattern or structure that was nonexistent before. It is the category in the cognitive domain that most clearly provides for creativity. "What can I create from the information and ideas I have?"

4. Analysis: Involves breaking material down into its constituent parts, seeing how the parts are related, and being able to explain these relationships. "Why does this work as it does?"

3. Application: Involves using knowledge in new, not previously learned ways. It requires the ability to use abstractions in concrete situations. Seeing relationships and connections is an important skill here. "How can I use what I know in different situations?"

2. Comprehension: Involves putting knowledge in a different form by paraphrasing, summarizing, interpreting, or inferring. It represents the lowest level of understanding because a person can use the information without seeing the big picture. "What does this mean?"

1. Knowledge: Involves recall or recognition of specific facts. The focus is on remembering. Television game shows, Trivial Pursuit, and many objective tests focus on this type of learning. "What do I know?"

The second taxonomy, which addresses the Affective Domain, was developed in 1956 by David Kratwohl. As before, the elements are presented in descending order, from highest to lowest, each with a statement typical of that level.

5. Characterization: Acting consistently in accordance with internalized values to the point that 1) we are described and characterized as having specific, pervasive tendencies and behaviors, and 2) these beliefs, ideas and attitudes are integrated into a total philosophy or world view. "I want my epitaph to read,

Cooperative Education in the New Millennium - Implications for Faculty Development - *Continued from Page 3*

'She was never known to utter a cross word to anybody,'" or "I want to be known as Mr. Dependable."

4. Organization: Beginning to develop an internally consistent value system. Seeing how values are interrelated and being able to establish priorities. "Doing this assignment will mean missing my favorite television program, but in the long run developing this new knowledge and skill base is much more important than entertainment."

3. Valuing: Acknowledging that something has worth. The learner willingly displays behavior consistent with a belief or attitude. "I can see the importance of this and embrace it as something I need or want to do."

2. Responding: A willingness to commit in at least some way to participate in the given activity. The learner reacts as well as shows awareness. "I will do this assignment because the instructor asked me to." "I am not sure why we are doing this, but I will give it a try."

1. Receiving (attending): A willingness to receive or attend to phenomena and stimuli. The learner is passive, but attentive and listening with respect. "I'll show up and at least hear what the person has to say."

In 1970, R.H. Dave developed a taxonomy for the Psychomotor Domain, comprised of five elements, again presented in descending order.

5. Naturalization: Having high-level performance becomes natural, without needing to think much about it. Examples: Nancy Lopez or Tiger Woods hitting a golf ball, animators creating a movie, an Amish woodworker making a piece of furniture.

4. Articulation: Coordinating a series of actions, achieving harmony and internal consistency. Example: Producing a video that involves music, drama, color and sound.

3. Precision: Refining, becoming more exact. Few errors are apparent. Example: Working and reworking something so it will be "just right."

2. Manipulation: Being able to perform certain actions by following instruction and practicing. Example: Creating work on one's own, after taking lessons or reading about it.

1. Imitation: Observing and patterning behavior after someone else. Performance may be of low quality. Example: Copying a work of art, repeating the movements of a ski or dance instructor.

Each of these taxonomies is arranged as a hierarchy, which means that one must be competent at a lower level before moving up the ladder. For example, we must know before we can comprehend, we must attend before we can respond, we must learn precision before we can demonstrate articulation.

An examination of the industrial education model described earlier makes it clear that the focus has been on the two lowest levels in each domain. Students attend classes and complete assignments, learn through imitation and manipulation, and are evaluated on what they know and understand. However, a look into the future makes it clear that our survival, both as individuals and as a nation, will depend on our ability to function at higher levels in all three domains. Helping students move to the third level has almost limitless implications for co-op.

Educators at all levels are being asked to help students acquire higher order thinking skills. However, students will not be able to analyze, synthesize and evaluate unless they have a context for doing so. This context comes through application. Two obvious topics for faculty development immediately come to mind: 1) helping faculty understand that application is a higher level of cognition than merely knowing and comprehending, and providing examples of this, 2) prodding faculty with ideas and activities they can use to help students apply classroom knowledge to the world-at-large.

Recruitment and retention are major issues on many campuses. Being able to attract and hold students is a continual concern. Faculty development programs showing how co-op and other experiential learning strategies help students value what they are learning thereby increasing the likelihood of their completing a program, can be extremely effective. How would recruitment and retention be affected if an institution could guarantee that students always know what they are learning, why they are learning it, and how they can apply it in some meaningful way?

In many classrooms, a passing grade can be 65 percent or lower. For some students, good enough is a way of life. However, in high performance workplaces, where continuous improvement and striving for perfection are the standard, nothing less than a total quality effort is acceptable. Students who have co-op and other work-based learning experiences learn this quickly. Faculty development programs that address this emphasis on quality can have campus wide implications.

Finally, think of the staff development possibilities when an institution:

- decides to focus on student performance, rather than on paper and pencil assessments.
- wants to develop a response to students who ask, "If I spend all this money to attend your college, what will I have at the end of the line?"
- tries to respond to employers who complain because graduates are not prepared for a high performance workplace.
- realizes the need to provide more applied, contextual learning experiences for students.
- publicly commits to helping students develop higher order thinking skills
- learns that many of its graduates are unhappy about being unemployed or underemployed because they can't describe what they know and can do.

Co-op practitioners who are aware of the issues and trends described here will be in the catbird seat when it comes to designing cutting edge faculty development programs for their respective campuses.

Cal Crow is the co-founder of the Center for Career and Work-Related Education, one of the nation's first organizations to link education reform with the changing economy and workplace.

Imagine a College or University...

by Cal Crow

Where the emphasis is always on what students are learning rather than on what is being taught or offered.

Where students help shape instructional practices by making choices about what they learn.

Where the entire campus is a learning community -- the watchword is learning, and everyone learns from everyone else.

Where every student maintains some type of education and career plan that is revised and updated regularly.

Where instructors ensure that students know what they are learning, why they are learning it, and how they can use it to improve their lives.

Where students successfully complete performance-based assessments, making it possible to describe a diploma in terms of what students know and can do, rather than in terms of credits, courses and seat time.

Where faculty, staff and students understand and emphasize the SCANS skills.

Where departmental boundaries and labels such as "academic" and "vocational" are eliminated, or at least softened, in favor of a more integrated approach to instruction.

Where students work regularly on interdisciplinary projects that enable them to integrate and apply skills from a variety of subjects.

Where students have the opportunity to work in teams and see faculty and staff doing the same thing.

Where students learn the importance of being flexible and responsive to change, and see faculty and staff modeling these behaviors.

Where assessment, grading and other evaluation mechanisms are designed to improve learning.

Where students, faculty and staff understand the importance of career management, and career development is an essential component of every student's education.

Where all students have work-based learning experiences that enable them to apply what they have learned in the classrooms and laboratories.

Where all faculty use both classroom experiences and work-based learning to meet the needs of students.

Where the learning/teaching process extends to the community through coalitions and partnerships.

Where all faculty and staff understand the knowledge, skills and behaviors necessary for success outside the institution, and ensure that students acquire them.

Where instruction consistently reflects the latest research about learning. ■

Success in the Workplace

Is there a secret to succeeding in the workplace today? What distinguishes an employee from his or her peers? How do employers determine who is best suited for a job?

Jean Gatz, a former employment counselor, quizzed top-level executives about the qualities of standout employees and reported her findings in **How to Be the Person Successful Companies Fight to Keep**, a book she co-authored with Connie Podesta, a licensed professional counselor and president of an agency specializing in workshops and seminars.

"At the top of the list -- with character and integrity -- is accountability," Gatz says. "Or, as one executive said, 'you know what needs to be done, and can be counted on to do it right, on time, and without constant reminder or supervision.'"

Gatz outlines other effective strategies for achieving workplace success:

- **Get your personal life in order:** "Employers are usually sensitive to situations where employees are coping with difficult personal issues," Gatz says. "But they also expect employees to deal with the issues or ask for help in resolving them."
- **Demonstrate and document value-added benefits:** "The number one goal of any company or organization is to stay in business," Gatz says. "Employees need to find ways to make or save money for their employers."
- **Work smarter, harder, faster:** "Get over the mind-set that you work for a company," Gatz says. "Think of yourself as a consultant and continually look at ways that you can help your organization function more efficiently and cost-effectively."
- **Welcome change:** "An employee cannot continue to do a job well without adapting to change," Gatz says. "Ironically, when people are worried about keeping their jobs, they are the most resistant to change. They adopt the exact opposite behavior of what companies are looking for in employees."
- **Commit to lifelong learning:** Gatz encourages employees to keep up with business trends and acquire job skills they are likely to need in the future. "Employers are more likely to retain people who have developed more effective work methods over those who fail to upgrade their skills," she says.
- **Look for leadership opportunities:** Every employee, regardless of job title, should be willing and able to assume a leadership role," Gatz says. "It's an ideal opportunity to demonstrate one's ability and value to an organization." **Communicate openly and directly:** "Writing, verbal and electronic skills are essential in every work environment," Gatz says. "Knowing how to listen is equally important." Gatz contends that the way employees communicate is a reflection of how they perceive and perform their jobs. ■